IN THE CLAIMS

The Claims as they currently stand are presented below.

1. (Original) Apparatus for selecting or excluding and identifying the manner of selecting and excluding complex sets of objects contained in a set of such objects, and for illustrating same in a tree-like graphical form, comprising:

an input data memory for storing a mapping from objects in a set of objects from which

5   a complex set is to be selected to a set of nodes organized in a tree-like structure that represents an ordering of the objects;

an input data memory for storing an identification of each node independent of its order, and for identifying each node in relation to other nodes in the hierarchy by storing references, if any, to a parent node, one or more sibling nodes and one or more child nodes, along with an

10   indication of whether the representation constitutes a full or partial partition of the set that is represented, and for storing a status state of the selection or exclusion of each node to represent the status state of selection or exclusion of the node;

a processing mechanism for changing the status state of nodes in a tree-like graphical presentation of the nodes, storing the results in data memory, and changing the representation of

15   the states based on an input event from the user; and

an output data device that updates the status state of selection of each node effected by the input event by operation of the process and stores the change in data memory.

2. (Original) The apparatus recited in Claim 1 wherein the processing mechanism comprises a processing system.

3. (Original) The apparatus recited in Claim 1 wherein the processing mechanism comprises software.

4. (Original) The apparatus recited in Claim 1 wherein the tree-like structure comprises a hierarchical ordering of the objects.

5. (Original) The apparatus recited in Claim 4 wherein the input data memory stores an identification of each node that is independent of its position in the hierarchy.

6. (Original) The apparatus recited in Claim 1 wherein the status state of the selection or exclusion of the node is represented by graphical icons.

7. (Currently amended) The apparatus recited in Claim 6 wherein the processing ~~system~~ mechanism changes the status state of nodes in a tree-like graphical presentation of the nodes, stores the results in data memory, and changes the graphical icon representation of the states based on the input event from the user.

8. (Original) The apparatus recited in Claim 6 wherein the output data device changes the icon graphically representing the status of selection or exclusion of each node so affected.

9. (Currently amended) The apparatus recited in Claim 1 wherein the processing ~~system~~ mechanism processes the data by:

evaluating a current state of selection or exclusion of a node that is subject to an event, and, based on the state, retaining or changing the state in a designated sequence based upon

5   receipt of the input event;

recursively evaluating the current state of selection or exclusion of each child node, if any, of the node that is subject to the event, and, based on the state of selection, retaining or changing the state in a designated sequence based upon the result of the processing of the node subject to the input event; and

10   recursively evaluating the current state of selection or exclusion of each parent node, if any, of the node subject to the event, and determining whether all child nodes of the parent constitute a complete partition of the object represented by the parent node, and based on the results, and retaining or changing the status state of the icon in a designated sequence.

10. (Currently amended) The apparatus recited in Claim 9 wherein the processing ~~system~~ mechanism further processes the data by:

updating a display of the state resulting from such processing that corresponds to the node

5   updating the display of the state resulting from such processing that corresponds to the child node; and

updating the display of the state resulting from such processing that corresponds to the parent node.

11. (Currently amended) The apparatus recited in Claim 6 wherein the processing ~~system~~ mechanism and software processes the data by:

evaluating a current state of selection or exclusion of a node that is subject to an event, and, based on the state, retaining or changing the state in a designated sequence based upon

5 receipt of the input event, and updating a display of the graphical icon representing the state resulting from such processing that corresponds to the node;

recursively evaluating the current state of selection or exclusion of each child node, if any, of the node that is subject to the event, and, based on the state of selection, retaining or changing the state in a designated sequence based upon the result of the processing of the node

10 subject to the input event and updating the display of the graphical icon representing the state resulting from such processing that corresponds to the child node; and

recursively evaluating the current state of selection or exclusion of each parent node, if any, of the node subject to the event, and determining whether all child nodes of the parent constitute a complete partition of the object represented by the parent node, and based on the

15 results, retaining or changing the status state of the icon in a designated sequence and updating the display of the graphical icon representing the state resulting from such processing that corresponds to the parent node.

12. (Currently amended) The apparatus recited in Claim 11 wherein the processing ~~system~~ mechanism further processes the data by:

updating a display of the graphical icon representing the state resulting from such processing that corresponds to the node

5 updating the display of the graphical icon representing the state resulting from such processing that corresponds to the child node; and

updating the display of the graphical icon representing the state resulting from such processing that corresponds to the parent node.

13. (Original) A method for selecting or excluding and identifying the manner of selecting and excluding complex sets of objects contained in a set of such objects, and for illustrating same in a tree-like graphical form, comprising the steps of:

storing a mapping from objects in a set of objects from which a complex set is to be

5   selected to a set of nodes organized in a tree-like structure that represents an ordering of the objects;

storing an identification of each node independent of its position in the order, identifying each node in relation to other nodes in the hierarchy by storing references, if any, to a parent node, one or more sibling nodes and one or more child nodes, along with an indication of

10   whether the representation constitutes a full or partial partition of the set that is represented, and storing a status state of the selection or exclusion of each node;

changing the status state of nodes in a presentation of the nodes, storing the results in data memory, and changing the representation of the states based on an input event from the user; and

15   updating the status state of selection of each node effected by the input event by operation of the process and storing the change.

14. (Original) The method recited in Claim 13 wherein the tree-like structure comprises a hierarchical ordering of the objects.

15. (Original) The method recited in Claim 14 wherein an identification of each node that is independent of its position in the hierarchy is stored.

16. (Original) The method recited in Claim 13 wherein the status state of the selection or exclusion of the node is represented by graphical icons.

17. (Original) The method recited in Claim 16 wherein the status state of nodes is stored in a tree-like graphical presentation of the nodes, the results are stored, and the step of updating the status state changes a graphical icon representation of the states based on the input event from the user.

18. (Original) The method recited in Claim 16 wherein the step of updating the status state changes the icon graphically representing the status of selection or exclusion of each node so affected.

19. (Original) The method recited in Claim 13 which further comprises the steps of:

evaluating a current state of selection or exclusion of a node that is subject to an event, and, based on the state, retaining or changing the state in a designated sequence based upon receipt of the input event;

5   recursively evaluating the current state of selection or exclusion of each child node, if any, of the node that is subject to the event, and, based on the state of selection, retaining or changing the state in a designated sequence based upon the result of the processing of the node subject to the input event; and

recursively evaluating the current state of selection or exclusion of each parent node, if

10   any, of the node subject to the event, and determining whether all child nodes of the parent constitute a complete partition of the object represented by the parent node, and based on the results, and retaining or changing the status state of the icon in a designated sequence.

20. (Original) The method recited in Claim 16 which further comprises the steps of:

evaluating a current state of selection or exclusion of a node that is subject to an event, and, based on the state, retaining or changing the state in a designated sequence based upon receipt of the input event, and updating a display of the graphical icon representing the state

5   resulting from such processing that corresponds to the node;

recursively evaluating the current state of selection or exclusion of each child node, if any, of the node that is subject to the event, and, based on the state of selection, retaining or changing the state in a designated sequence based upon the result of the processing of the node subject to the input event and updating the display of the graphical icon representing the state

10   resulting from such processing that corresponds to the child node; and

recursively evaluating the current state of selection or exclusion of each parent node, if any, of the node subject to the event, and determining whether all child nodes of the parent constitute a complete partition of the object represented by the parent node, and based on the results, retaining or changing the status state of the icon in a designated sequence and updating

15   the display of the graphical icon representing the state resulting from such processing that corresponds to the parent node.